

(12) **UK Patent Application** (19) **GB** (11) **2 219 770 A** (13)  
(43) Date of A publication **20.12.1989**

(21) Application No 8913601.4

(22) Date of filing **13.06.1989**

(30) Priority data  
(31) 8814538 (32) 18.06.1988 (33) GB

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(51) INT CL<sup>4</sup>  
**B63B 7/06**

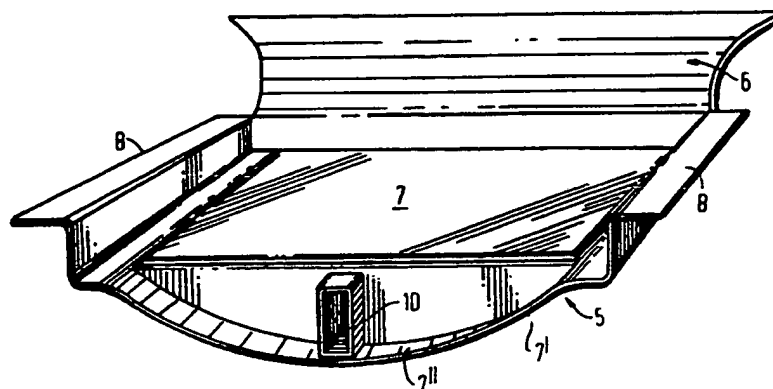
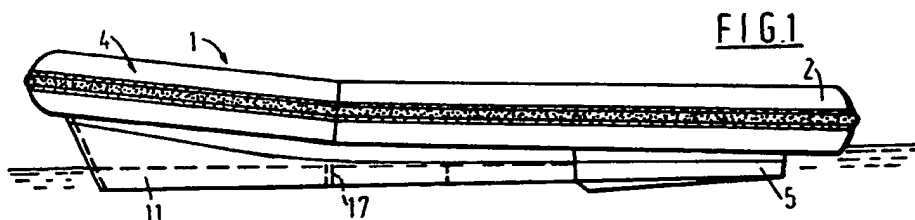
(52) UK CL (Edition J)  
**B7A ADN**

(56) Documents cited  
**GB 2135940 A GB 1526254 A GB 1170907 A  
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(58) Field of search  
**UK CL (Edition J) B7A ADM ADN  
INT CL<sup>4</sup> B63B**

(54) Inflatable boat

(57) A boat 1 having inflatable tubular side walls or sponsons 2, 3 joined together in bow region 4 and having a fabric or flexible bottom part 11 in middle and front or bow regions, preferably reinforced with a keel (14) and decking (15, 16) and a rigid hull or bottom part 5 with integral rigid transom 6 in the rear or stern region defining a planing hull part and onto which the middle and bow parts may be folded when not in use.



**FIG. 3**

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

**GB 2 219 770 A**

FIG.1

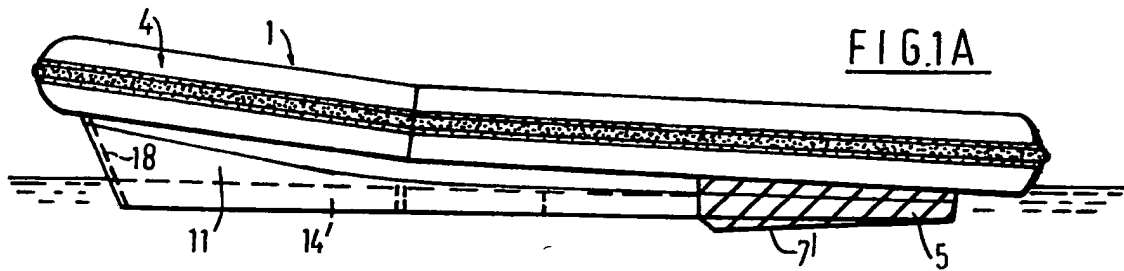
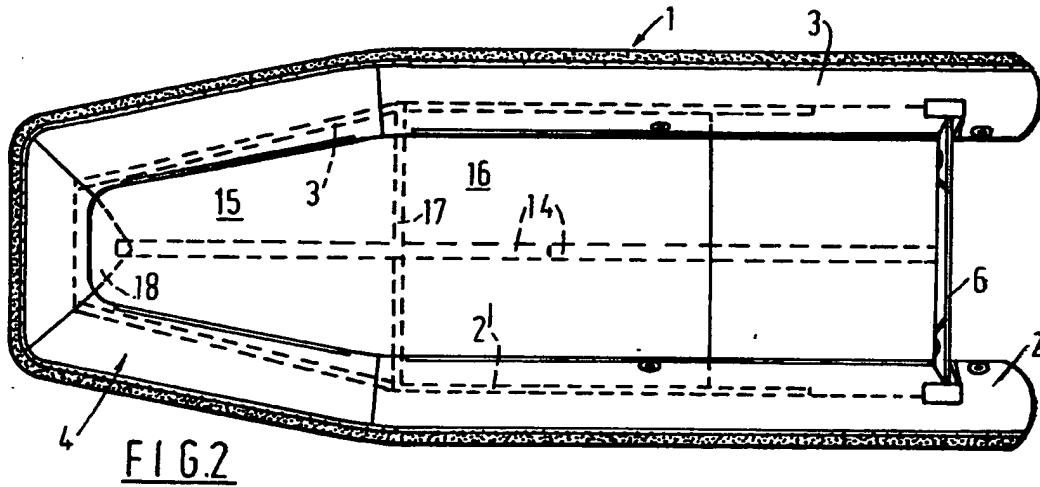
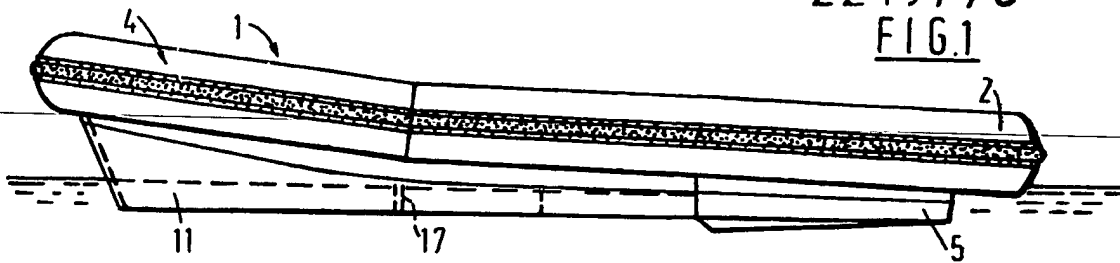


FIG.1A

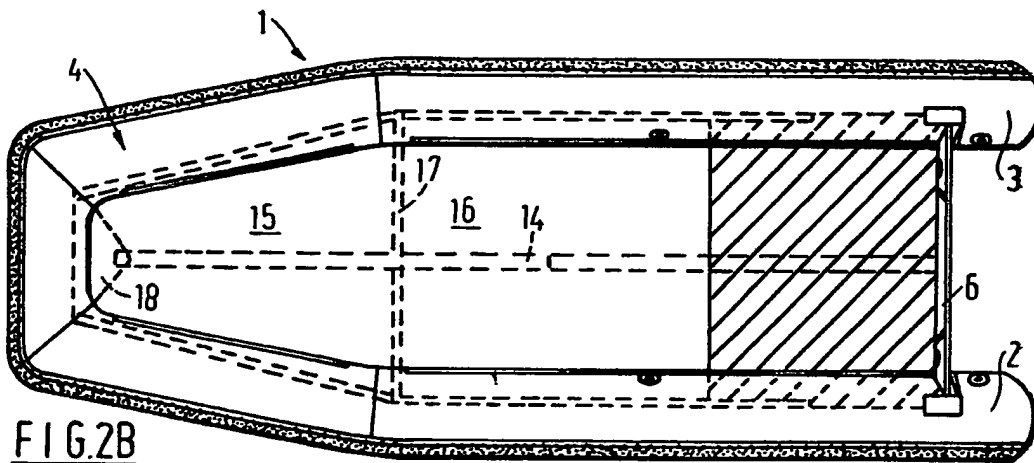


FIG.2B

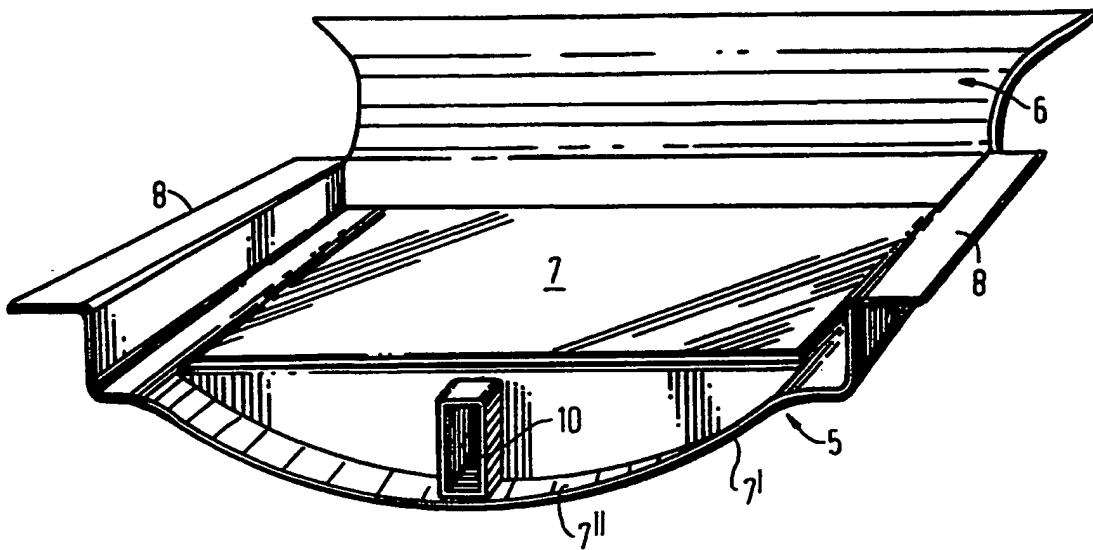


FIG. 3

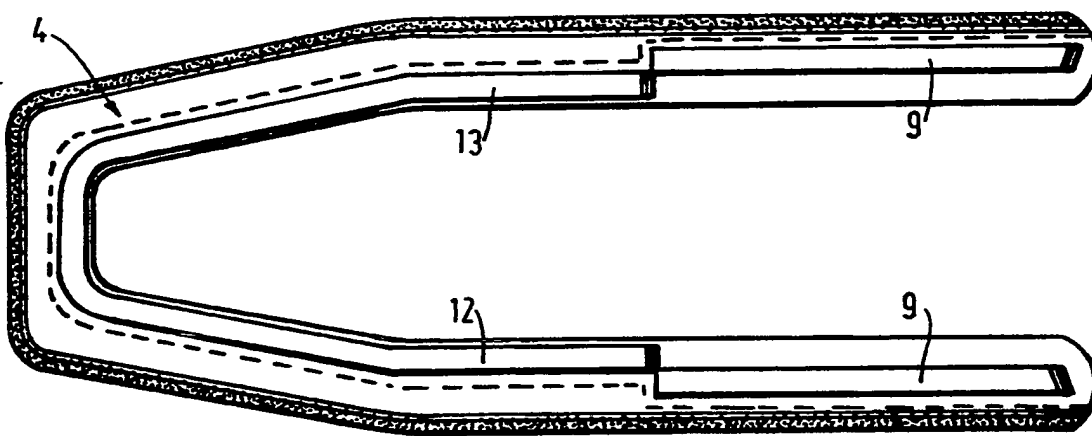


FIG. 4

IMPROVED INFLATABLE BOAT

The present invention relates to an improved inflatable boat.

5 Inflatable dinghies or boats are known having inflatable tubular side walls with a flexible floor material extending therebetween which may have floorboards or the like thereabove and may have a rigid keel member to provide some shape and rigidity to the otherwise flexible hull bottom. Whilst totally flexible inflatable boats may be  
10 readily folded when deflated and when any flooring and/or keel has been removed, such have the disadvantage of a hull shape which is not of optimum shape and rigidity for planing and a transom between the sidewalls and bonded to the flexible floor material which can only have a limited  
15 amount of power applied thereto. Furthermore, even when folded, the floor members and keel occupy substantial space and the folded boat is not easily carried because of its loose flexible nature.

20 Inflatable boats are known having inflatable tubular side walls (sponsons) connected to a rigid shaped hull with integrally formed transom which provides a shape suitable for planing and hence high-speed travel and a transom capable of receiving an engine which may provide  
25 considerably increased drive power. Such a boat is known as a rigid inflatable boat (RIB) (as opposed to a simple inflatable boat which has a flexible hull material and simple transverse rigid transom) and has the possible disadvantage of not having a collapsible hull.

30 It is an object of the invention to provide an inflatable boat which possesses the feature of improved deflation and folding compared with an R.I.B. but which has adequate planing capabilities and, preferably, a  
35 strengthened transom connection.

According to the present invention there is provided a boat having inflatable, tubular flexible side walls interconnecting in the bow region, and hull or bottom parts extending between said inflatable side walls comprising a flexible material hull or bottom part and a rigid hull or bottom part.

It will be appreciated that by providing only a part of the hull which is rigid such may exhibit certain advantageous features of a rigid hull part and/or enable the remainder of the flexible hull and side walls when deflated to be folded thereonto to provide for a compact, stable deflated condition and facilitate carrying of the deflated boat-carrying points possibly being provided on the rigid hull part.

Preferably at least the rear or aft part of the hull will be rigid so as to provide for good planing and in such case the transom will be preferably integral with or integrally formed therewith so as to provide greater strength and enable greater power to be used to drive the boat. A skeg-like or other keel portion or other fin-like members may be provided to give improved stability and steerage at speed. More than one rigid hull section may be provided and be suitably interconnected to permit removal or folding of the rigid hull parts to enable the boat to be stored in compact space when not inflated. It is even envisaged that the whole of the hull may be of rigid interconnectable sections which may be disconnected and/or folded when desired.

In a preferred embodiment of the invention, an inflatable boat comprises inflatable tubular flexible side walls interconnecting in the bow region and having a rigid aft hull part with integral transom part connected between the aft portions of the side walls and having a flexible material hull part forward thereof and extending therefrom

and between the side walls to the bow region. Preferably rigid or substantially rigid side members will be provided on each side in a lower region to maintain the peripheral outline hull shape and such will preferably be in sections and removable or foldable. Furthermore a central and preferably sectionalised keel member will preferably be provided removably locatable in receiving means, such as a socket or collar in the rigid hull part, and extend forward and securable in the bow region. A removable generally triangular or otherwise shaped board may be provided and locatable in the bow regions to provide the requisite bow shape.

The rigid hull and/or rigid side members will be secured by means of flexible strips bonded or adhered longitudinally to the inflatable tubular flexible side walls and may be secured by nuts and bolts passing through apertures in flanges or the parts themselves possibly with appropriate sealing means.

The tubular inflatable flexible wall portions may have an internal safety construction as described in our U.K. Patent Application No. 8512614 published under number 2174958 incorporated herein by reference.

The combined RIB/inflatable boat according to the invention has advantages of both types of craft. It is as compactable as an inflatable as the rigid section of the hull is no bigger than the floor boards of a purely flexible inflatable.

It has the advantage of a GRP (or aluminium) hull section in which to stow the inflatable. The GRP section is easier to carry than a "soft" package.

When planing, only the aft end of a RIB hull is in

contact with the water therefore the preferred rigid end  
of the present combination should give this craft RIB  
performance which is far superior to purely flexible  
inflatable boats. The boat according to the invention also  
5 preferably has a moulded skeg on the rigid hull for directional  
stability at speed, the boat is quick and simple to  
assemble, will accept higher power than comparably  
sized inflatables since the transom is part of rigid hull  
and not just attached to tube sides.

10

The invention will be described further, by way of  
example, with reference to the accompanying drawings,  
in which: -

15

Fig. 1 is a side elevation of an inflatable boat  
forming an embodiment of the present invention;

Fig. 2 is a plan view of the boat of Fig. 1;

20

Figs. 2A and 2B are the same as Figs. 1 and 2 except  
for hatching lines indicating the rigid hull part;

Fig. 3 is a schematic perspective view of the  
integral aft rigid hull part and transom; and

25

Fig. 4 is a plan from below of the inflatable, tubular  
and flexible side walls on their own without hull parts  
indicating generally the longitudinal side flaps bonded  
thereto for connection of the rigid aft hull part of  
Fig. 3 and of rigid side members (not shown) and the forward  
30 flexible hull part (not shown in Fig. 4).

35

An inflatable boat 1 is illustrated having inflatable  
flexible tubular side walls 2 and 3 joining together in bow  
region 4. A rigid hull part 5 with connected transom 6  
is provided preferably of GRP and preferably integrally

formed. The rigid hull part comprises a main floor part 7 which also forms a buoyancy part and has a lower, outer surface 7' shaped the same as the aft part of a known rigid planing hull and having lateral flange portions 8 for  
5 connection with lateral flexible flaps or strips 9 possibly in known manner as used with totally rigid hull inflatable boats. A rectangular socket 10 is integrally formed on a front wall portion of hull part 5 for removably receiving the end of a rectangular sectioned keel member 14 which  
10 runs the length of the flexible hull part 11 and is secured in the bow region to provide the desired hull shape in a similar manner to purely flexible-hulled boats.

A flexible hull part 11 is secured between inflatable  
15 sides 2, 3 by connection by bolting or the like between three strips 12 bonded to the lower regions of sides 2, 3 and extending along the sides and through the bow region 4. Elongate rigid side members 2', 3', preferably of wood, may be also incorporated between two of the three  
20 strips 12 and bolted in position yet removable as desired. Three strips 9 are provided on each side of the aft region with the strips nearest the sections 2, 3, being provided as a barrier to protect the inflated portions from bolt heads or nuts (not shown). The transom 6 is sealingly  
25 secured to sides 2, 3 by flange means or the like in known manner.

Where the terms "rigid hull part" and "flexible hull part" are used herein there may alternatively and perhaps more  
30 clearly be used, respectively, the terms "rigid bottom part" and "flexible bottom part".



In Figs. 1 - 2B, the fabric or flexible hull part 11 is secured to flange portion 7'' of part 5 and is held in shape by a removable and sectionalised keel 14 which is slotted into socket 10 of part 5. Removable decking boards 15, 16 are provided in the middle and front parts of the boat and supported on a cross member 17. A triangular, removable bow board 18 is provided in the bow.

In a modification of the boat of Figs. 1 - 4, instead of a rigid keel member 14, a tubular, inflatable keel member (not shown) preferably of generally circular cross section may be provided to reduce weight and facilitate preparation of the boat for use since inflation thereof will expand the boat. Further in this respect, instead of simple removable deck boards 15, 16, deck boards may be hingedly connected together and preferably also hinged to the rigid part 5 and be foldable into the collapsed condition located over floor part 7 for compact storage. This deck board arrangement greatly facilitates preparation of the boat for use since upon inflation of sides 2, 3 and the inflatable keel where provided, the boat unfolds into the position of use and the deck boards may be made more rigid in their interconnection by suitable locking means, if needed.

CLAIMS

1. A boat having inflatable, tubular flexible side walls interconnecting in the bow region, and hull or bottom parts extending between said inflatable side walls comprising a flexible material hull or bottom part and a rigid hull or bottom part.  
5
2. A boat as claimed in claim 1, constructed and arranged such that by providing only a part of the hull or bottom part which is rigid, the boat exhibits certain advantageous features of a rigid hull part and/or enables the remainder  
10 of the flexible hull part and side walls when deflated to be folded thereonto to provide for a compact, stable deflated condition and to facilitate carrying of the deflated boat-carrying points.  
15
3. A boat as claimed in claim 1 or 2 in which boat-carrying parts are provided on the rigid hull part.
4. A boat as claimed in any of claims 1 to 3, in which  
20 at least the rear or aft part of the hull bottom is rigid so as to provide for good planing.
5. A boat as claimed in claim 4, in which the transom is integral with or integrally formed with the rigid  
25 bottom part so as to provide greater strength and enable greater power to be used to drive the boat.
6. A boat as claimed in any of claims 1 to 5, in which a skeg-like or other keel portion or other fin-like  
30 members are provided on the rigid bottom part to give improved stability and steerage at speed.
7. A boat as claimed in any of claims 1 to 6, in which more than one rigid hull section is provided and such are

suitably interconnected to permit removal or folding of the rigid hull parts to enable the boat to be stored in compact space when not inflated.

5        8. A boat as claimed in any of claims 1 to 7, in which the whole of the hull may be of rigid interconnectable sections which may be disconnected and/or folded, when desired.

10       9. An inflatable boat comprising inflatable tubular flexible side walls interconnecting in the bow region and having a rigid aft hull bottom part with integral transom part connected between the aft portions of the side walls, and said boat having a flexible material hull  
15       bottom part forward of said rigid bottom part and extending therefrom and between the side walls to the bow region.

20       10. A boat as claimed in claim 9, in which rigid or substantially rigid side members are provided on each side in a lower region to maintain the peripheral outline hull shape and such will preferably be in sections and removable or foldable.

25       11. A boat as claimed in claim 9 or 10, in which a central and preferably sectionalised keel member is provided removably locatable in receiving means, such as a socket or collar in the rigid hull part, and extends forward and is securable in the bow region.

30       12. A boat as claimed in any of claims 9 to 11, in which a removable generally triangular or otherwise shaped board is provided and locatable in the bow region to provide the requisite bow shape.

35       13. A boat as claimed in any of claims 9 to 12, in which

the rigid hull bottom part and/or rigid side members are/is secured by means of flexible strips bonded or adhered longitudinally to the inflatable tubular flexible side walls and is securable by nuts and bolts or the like fastening means passing through apertures in flanges or in the parts themselves.

14. A boat as claimed in claim 13 in which appropriate sealing means are provided adjacent said flexible strips.

15. A boat as claimed in any of claims 1 to 14, in which the rigid bottom part has a moulded skeg on the rigid hull for directional stability at speed.

16. A boat substantially as herein described with reference to the accompanying drawings.

17. A boat as claimed in any of claims 1 to 15, in which an inflatable keel is provided extending from said rigid hull or bottom part.

18. An inflatable boat comprising inflatable tubular flexible side walls interconnecting in the bow region and having a rigid aft hull bottom part with integral transom part connected between the aft portions of the side walls, and said boat having a flexible material hull bottom part forward of said rigid bottom part and extending therefrom and between the side walls to the bow region; wherein the rigid bottom hull part extends between the inflatable side walls and is connected thereto via lateral flanges and the central portion on the inboard side of the rigid part is formed as a buoyancy compartment with an upper surface which forms a floor part, in which a transverse flange portion extends between the lateral flanges and the flexible material hull part bottom part is connected to said transverse flange, and in which means are provided on said rigid part for receiving keel means.